EAGER

REGIONAL WORKSHOP ON THE IMPLEMENTATION OF FINANCIAL PROGRAMMING

Lilongwe, Malawi

June 10–11, 1999

CONTENTS

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We are indebted to our three able rapporteurs—O. Nkuna, C. Msosa, and K. Mulwafu, all of the Reserve Bank—for their timely provision of useful notes. These notes were assembled and edited by Robert Wieland. Bruce Bolnick then reviewed the first draft of the report and provided extensive comments and revisions.

The conference organizers thank USAID and the management of the Reserve Bank of Malawi for their support in making the workshop and this workshop report possible.

ACRONYMS AND TERMS

AERC	African Economic Research Consortium
ARIMA	Auto-Regressive Integrated Moving Average
CPI	Consumer Price Index
DC	Domestic Credit
EAGER	Equity and Growth through Economic and Social Research
ESAF	Economic Structural Adjustment Facility
FP	Financial Programming
GDP	Gross Domestic Product
GEF	Government Earmarked Funds
HIID	Harvard Institute for International Development
IMF	International Monetary Fund
MEFMI	Macroeconomic and Financial Management Institute
MEMAR	Malawi Economic Management and Reform (Project)
MTEF	Medium-Term Expenditure Framework
NDA	Net Domestic Assets
NFA	Net Foreign Assets
NGO	Non-governmental Organization
OIN	Other Items Net
PSGE	Public Strategies for Growth and Equity
RBM	Reserve Bank of Malawi
REER	Real Effective Exchange Rate
SADC	Southern Africa Development Community
USAID	U.S. Agency for International Development

EXECUTIVE SUMMARY

On June 10-11, 1999, the Reserve Bank of Malawi, in partnership with Chancellor College and the U.S. Agency for International Development (USAID), sponsored the Regional Workshop on the Implementation of Financial Programming. The purpose of the workshop was to share experiences gained in implementing financial programming (FP) models and in institutionalizing macroeconomic consistency objectives more generally. Held in Lilongwe, Malawi, the workshop was funded by USAID through the Public Strategies for Growth and Equity (PSGE) arm of the Equity and Growth through Economic and Social Research (EAGER) Project.

Representatives of academic institutions, government ministries, central banks, and aid institutions joined the workshop. Most participants, however, were from either the central banks or ministries of finance of their respective countries: Kenya, Tanzania, Uganda, Zambia, Mozambique, and host country Malawi. This preponderance of technicians from the front lines of monetary management generated a bias toward a practical and applied discussion of the problems, challenges, and opportunities attending financial programming.

A financial program is a set of policy measures designed to achieve explicit macroeconomic goals. By equating aggregate demand for money to aggregate supply through a set of accounting constraints and linking equations, FP provides a map for achieving or maintaining macroeconomic balance. Macroeconomic imbalances occur when claims on resources fall out of line with resources available, and they are quite common in countries that use or, in the recent past, have used a government-led approach to economic development. For such countries, a financial program provides a means for monitoring and projecting important macroeconomic outcomes which, formerly, were thought to be administratively determinable.

The *de facto* standard for FP is set by the International Monetary Fund (IMF), which has been measuring nations' accounts and developing and implementing financial programs for almost 50 years and, as such, has gained considerable institutional capability in the area. On the other hand, most countries possess the means for developing local models for measuring macroeconomic balance, and there are a number of reasons why they might wish to do so. In negotiating the terms of access to IMF resources, countries would benefit from being able to challenge the IMF's technical work. Also, countries are likely to better implement policies they feel are their own than policies they feel are foisted upon them.

Countries in the region are only recently beginning to create a domestic capacity for FP. Previously, they faced the problem of macroeconomic balances in a piecemeal fashion and with limited success. During the course of the workshop, representatives from Mozambique, Uganda, Kenya, Tanzania, Zambia, and Malawi presented FP models and their countries' experiences in implementing them. As both host country and country that had made the most-recent leap in financial planning, Malawi

provided—through its Reserve Bank (RBM)—a close look at its experiences and achievements with regard to macroeconomic consistency and negotiations with the IMF.

This workshop report is based upon notes rapporteurs made during the presentations and ensuing discussion. Readers will find not verbatim transcripts but summaries of what was said during each session of the conference. Papers that were reported in these sessions are available through Clive Gray, Chief of Party for HIID's EAGER team. Some of the country-specific information shared during this well-organized and well-attended workshop is summarized in the following pages.

Implementation of Financial Programming in Countries of the Region

Malawi

Bruce Bolnick, who has been providing technical assistance to RBM under USAID's Malawi Economic Management and Reform (MEMAR) project, provided background to the macroeconomic consistency model currently serving as the basis of Malawi's financial program.

As with any FP model, the macroeconomic consistency model allows policymakers to specify target values for such objectives as inflation and foreign exchange reserves and to then derive values for other macroeconomic variables that can be expected given those targets and given specific assumptions about exogenous variables. The output of this model allows monetary managers and public finance policy-implementers to make decisions about growth of the money supply and private and public credit. Until now, RBM has relied upon "naïve" methods and best-guess estimates for determining the macroeconomic and structural parameters for monetary management.

Martin Ganiza, an assistant division chief at RBM who has also been involved in implementing Malawi's FP model, presented a discussion of the shift in Malawi's management of its monetary programming. Whereas in the past it was the Central Bank's role to collect data for the IMF, in recent years RBM has been developing and institutionalizing its own FP model. This model links the four major macroeconomic accounts through a set of equations and a spreadsheet database. By enforcing consistency across the macroeconomic parameters measured in this model, it is possible to examine the full range of effects that would obtain if targets were changed.

In addition to allowing policymakers to examine outcomes under "what-if" scenarios, the model provides a basis for undertaking econometric analysis to test the accuracy and improve the precision of estimated coefficients. The macroeconomic consistency model is still a work in progress, having been in place for less than a year. Its first stage required creation of a database system with an institutionalized system for updating and checking monetary accounts, fiscal data, foreign exchange transactions,

and macroeconomic data. The second stage involved econometric estimation of inflation, money demand, the import function, and gross domestic product (GDP).

Although new, the model has served very usefully thus far, improving RBM's ability to manage important macroeconomic policy tools and improving Malawi's negotiations with the IMF regarding the Fund's FP model for Malawi. During their most recent visit, IMF staff commended RBM for its effort in developing the FP model, and the tenor of the ensuing negotiations involved significant give and take.

In addition to the implementation presentations, a team of researchers from the University of Malawi, supported under the EAGER/PSGE activity and led by R. Mangani, presented a wide-ranging study recently undertaken regarding FP in Malawi. This study focused on simple, practical methodologies for projecting macroeconomic variables for use in the FP modeling process. The econometric analysis undertaken in the study was exploratory and used single-equation methods. Models were estimated, using various specifications, and then evaluated on the standard diagnostic tests for statistical significance, goodness of fit, and selected residual characteristics.

The models developed through this research provided strong econometric estimates of GDP growth, changes in the price level, demand for money, and the money multiplier. This research provided a start for better use of empirical information in refining and improving the accuracy of Malawi's FP model. Potential areas of focus for further research are the use of more-complex models, the use of different forecast periods, and the introduction of other important macroeconomic variables (e.g., interest rate and credit to nongovernment).

Finally, P. Ligoya, supervisor of the statistics section of the Research and Statistics Department of RBM, described the development of Malawi's database system on which the FP model is based. Begun in 1997, with assistance from the MEMAR and EAGER projects, this system is now in its final implementation stages. When it is sufficiently secure, the database is expected to become available to users beyond RBM staff.

Tanzania

A team from the Bank of Tanzania, led by J. Masawe, presented a study that—like the Malawi study—had been supported under EAGER/PSGE and aimed at improving the Bank's tools for predicting the economic impact of alternative monetary policies. Because the Bank of Tanzania has not thoroughly institutionalized an FP framework, the researchers had to start at a more fundamental level. Following an extensive literature review, key macroeconomic variables were identified and relationships between these key variables specified. Data on the key variables were compiled and put into a format that would permit analysis. Then, a simple structural econometric model was specified and estimated with the available data.

The model was estimated using quarterly data from 1986 to 1997. The researchers emphasized that their model was still at the exploratory stage and that, therefore, drawing policy implications from it may be premature. Data measurement issues, particularly relating to definitional breaks in time-series data need to be further addressed. Also, the model will have to incorporate some mechanism for dealing with long-run relationships between variables.

J. Nyella, also of the Bank of Tanzania, described the database system developed to provide adequate quality data for Tanzania's financial program. As was the case with the RBM, the database developed by Bank of Tanzania has not yet been extended to other institutions.

Kenya

C. Koori, of Kenya's Central Bank, presented a brief description of Kenya's financial program since 1987. There, the main assumption is that if the Central Bank can control base money, it can control the money supply, GDP, and inflation. The key parameter in this approach is the money multiplier. By influencing that, the Central Bank can influence commercial lending and, thereby, the money supply. Inflation can also be influenced in the same manner through demand for money. In its program the Bank of Kenya uses the accounting identity approach, in which the liability side of the Central Bank balance sheet equals the asset side. The reserve money target is determined by setting GDP and inflation targets.

When annual targets are determined, they are broken down into monthly and even daily targets. For example, the annual target in change in reserve money is divided by 12 months to get the monthly change in reserve money. The same approach is applied to pursue daily changes in reserve money. This helps the Bank make estimates on a daily basis, based upon balance sheet information. And by monitoring daily flows between the Central Bank, commercial banks, and government, it is possible to know both the current position and the expected position for tomorrow.

After obtaining the net injections (outflows), the latest reserve money position is used to get the expected reserve money target. Any discrepancies are traced to assess whether they are short- or long-term problems. If obtained indicators show that the intermarket is flooded, the Central Bank does not go into the market.

Mozambique

Mozambique's experience in institutionalizing an FP model was described by T.A. Wazella and C. Baptista, both of the Bank of Mozambique. In their country, monetary programming targets inflation, real GDP growth, and the external position with respect to foreign reserves. The program uses the MV-PQ approach in which change

in money supply times change in velocity of money is equal to the change in prices times the change in output. After the target money stock is calculated, it is applied at both macro and micro levels. At the macro level, M2 is defined as net domestic assets (NDA) plus net foreign assets (NFA). NDA is made up of domestic credit (DC) minus government earmarked funds (GEF) minus other items net. At the micro level, credit has formerly been allocated through various direct controls but, since 1994, has been based on the deposit-mobilization capacity of commercial banks. In this regard, the Central Bank is able to set clear limits on NDA growth.

When Mozambique's FP system was initially conceived, only three banks were operating, two of them state owned. With liberalization of the financial sector, new banks have entered, and competition has increased. Because of the credit controls exercised by the Central Bank, banks have sought ways to get around their ceilings. However, financial discipline improved in the sector after the state-owned banks were privatized.

Banking supervision has been an important factor in the improved efficacy of monetary management in Mozambique. Most importantly, the Bank of Mozambique has improved its prudential regulation and its bank supervision. In addition to these improvements, monetary management is strengthened through monthly meetings between the banks and the Central Bank, and these are used to keep both sides apprized of recent developments in the financial system. The meetings also aid the central Bank in letting commercial banks know the importance of complying with NDA targets.

Zambia

K. Nkalamo, acting assistant director for the Bank of Zambia, noted that—unlike Malawi and Tanzania—Zambia lags behind in terms of financial programming. Right now, little capacity exists in the Bank for implementing models such as those being discussed.

At present, Zambia uses simple relationships and identities in programming. Such programming looks at objectives; exogenous variables (such as export prices and net foreign financing); and derived variables (such as projections of exchange rates using purchasing power parity, i.e., domestic versus U.S. inflation). The Bank of Zambia projects nominal GDP by targeting real GDP and applying an estimated deflator. Money supply is projected using the quantity theory of money and assuming a constant velocity. Credit to the private sector is derived as a residual, and reserve money assumes a constant money multiplier.

Lastly, the Bank sets its monetary targets, which are agreed upon among the Bank of Zambia, Ministry of Finance, and IMF depending upon what is realistic and achievable. The net foreign assets of the commercial banks are projected using historical data and

proportions. The Bank follows monetary policy based upon reserve money and performance (policy) variables. The ceiling on net bank claims on the government is influenced by net balance-of-payments support, which takes into account external debt service and capital inflows. While government has agreed to increase Bank of Zambia staff dedicated to financial programming, this has not yet taken place.

Uganda

D. Kihangire described the FP framework in Uganda as a consensus exercise that is agreed to by all concerned parties. Policies are discussed at length and designed to take into account sensitive issues. All sectors of the economy—the fiscal, monetary, external, and real—are linked in the financial program.

Uganda stresses sustainability. Fiscal deficit/GDP ratios are assessed in tandem with poverty-eradication goals. The current account deficit as a ratio of GDP is targeted at between 8 and 11 percent, excluding grants. As for the real sector, the emphasis is placed upon structural measures. In the monetary sector, the emphasis falls upon inflation targets that are set at 5 percent.

The actual operationalization of financial programming in Uganda combines both naive and econometric models, with the former carrying more weight. Econometric models are done on exports, imports, and money demand functions. Studies in Uganda have shown that monetary expansion affects inflation with a three-month lag.

In implementing its financial programming, Uganda has experienced problems in the institutional arena. There are, for example, some questions regarding who should take responsibility for what. The Central Bank is assigned the monetary policy responsibility, while the Ministry of Finance is assigned responsibility for fiscal policy. There is also the issue of coordination between agencies and institutions. To alleviate these problems, several committees are now in place. At the Central Bank are the Monetary Policy and Financial Markets committees, which meet monthly; the Ministry of Finance has the monthly Cash Flow and Friday Prayer Breakfast committees.

Using information from these committees, periodic appraisals are made on the financial program. Positions at every month end are reviewed relative to the quarter, based on as much information as possible. This helps to avoid deviation from targets. As a result, inflation has remained at single-digit levels since 1993, and GDP growth at about 6.5 percent, sometimes going as high as 10 percent but then dropping down to 5 percent in drought years. Uganda is currently enjoying a supportive macroeconomic environment under both its financial program and its privatization regimes.

FP Links to Liquidity and Budget Management

As financial programming is a practical, applied tool, the workshop also focused on two of the most important areas in which FP can help countries achieve and maintain macroeconomic balance: namely, liquidity and budget management. Panelists from Malawi, Kenya, Mozambique, and Uganda described briefly how FP models are helping to improve liquidity and budget management in their countries.

Malawi. N. Nyirongo of RBM noted that, although targeting the price level is an effective approach, it is feasible only if the Central Bank has independence. For many emerging economies, the choice of targets is influenced by inherent rigidities in such alternative instruments as fiscal targets. In 1987, Malawi began to replace direct control of credit in the financial system with indirect monetary policy instruments as part of a wider liberalization of the financial system. In 1994, the Kwacha was floated, although some controls were retained on exchange of currencies. That same year, an auction was instituted for Malawi Treasury Bills.

As a result of these reforms, RBM has had to adopt policies and interventions that affected the markets only indirectly. This has entailed a move to open market operations. A monetary policy subcommittee meets every week to discuss the level of liquidity, which is based upon the level of supply and demand for reserve money. The subcommittee discusses as well ways to extract or inject liquidity. Since FP provides a framework under which supply of and demand for money can be projected into future periods, it is very attractive to RBM as a tool for fulfilling its charter.

Kenya. M. Okeyo, of the Ministry of Finance, noted the large gap between revenues and expenditures in his country. In 1994, a Budget Monitoring Committee was set up to strictly monitor the budget, and all issues relevant to the budget are discussed at this forum. The borrowing authority of the government is limited to 5 percent of its prior-year audited revenues, although because of the lag in audits, the limit is set against accounts that are now two years old.

Mozambique. C. Baptista, of the Bank of Mozambique, described the two operational agencies that determine and implement monetary policies and market interventions. The Monetary and Exchange Committee, which meets weekly, would benefit from the development of a short-term FP path that provided the Central Bank with monthly and weekly intervention targets. The second major organ of monetary policy is the Interbank Markets Coordination Committee, which analyses liquidity management and reserve money every week. However, because of lags in communication of information about movements of liquidity between banks, government forecasts of liquidity have been less than spectacular. More recently, both Central Bank and commercial banks are beginning to improve the timeliness of information and to thereby better manage the system’s liquidity. The Bank uses Treasury Bills and a discount window to implement its monetary program and to manage debt.

Uganda. D. Kihangire outlined for participants how liquidity is managed in Uganda. Before the beginning of the financial year, targets are set and, thereafter, these are

appraised every quarter. Monetary targets are an integral part of the monetary program; also included are fiscal, trade, and exchange rate targets, and structural reforms.

The liquidity gap—the difference between supply and demand for reserve money—is supported by other factors, such as exchange rate movements, weekly monitoring of inflation, and weekly monitoring of interest rates through Treasury Bills and interbank lending. Liquidity is managed through the range of instruments of monetary policy, some of which include Treasury Bills, Bank of Uganda Bills, a rediscount window, the reserve requirement ration, and intervention in the foreign exchange market.

Introduction

The Regional Workshop on Financial Programming took place June 10-11, 1999, in Lilongwe, Malawi, under the sponsorship of the Reserve Bank of Malawi (RBM) and in partnership with Chancellor College and the U.S. Agency for International Development (USAID). Convened to provide a forum within which monetary managers could share experiences in implementing financial programming (FP) models, this lively and well-organized workshop allowed participants to learn what other countries were doing in the area of macroeconomic management.

Following are summaries of workshop sessions, a list of papers presented, and a participant roster.

Opening Session

Chairman: M. Thondolo, Chancellor College
Speakers: E. Ngalande, Reserve Bank of Malawi
C. Gray, HIID/EAGER Project
T. Kalebe, Ministry of Finance, Malawi

Welcome by the Chair

On the morning of June 10, M. Thondolo welcomed participants to the FP workshop, a joint undertaking—through the EAGER Project—by USAID/Malawi, Chancellor College (where Thondolo heads the Department of Economics), University of Malawi, Reserve Bank of Malawi, and Harvard Institute for International Development (HIID). Noting that most participants were familiar with financial programming, Mr. Thondolo urged everyone to take part in the discussions so that the goal of shared experience could be achieved.

Welcome by E. Ngalande

On behalf of the governor of the Reserve Bank of Malawi, Deputy Governor Ngalande welcomed participants to the conference. Noting the representation from central banks of Kenya, Mozambique, Tanzania, Uganda, and Zambia in addition to the sizeable contingent from the Central Bank of Malawi and other local and international institutions, Dr. Ngalande attributed this excellent turnout to the fact that the conference topic had struck a responsive chord.

The purpose of the workshop is not to hold technical discussions on the FP methodology as a tool of economic policy; a number of other programs and courses address that aspect. Indeed, many of those gathered have already completed one or more such courses. Rather, the purpose is to discuss the *implementation* of financial programming by the central banks of the countries represented. For too long, regional economists have traveled to distant centers of learning to study financial programming using models designed for such countries as Hungary, Turkey, and Thailand. Upon their return home, however, these same economists have mixed results when trying to apply what they learn. To hear of those experiences during the course of this workshop will be useful.

Participants are well aware of the extent to which their countries depend upon International Monetary Fund (IMF) and World Bank staff in the design of financial programs to support economic stabilization. The results of financial targets and conditionalities set in Washington are there for everyone to see. Economic adjustment programs lacking local ownership lead to poor program implementation and performance. Where local ownership has been strengthened, however, program performance has been more encouraging.

The time has come for African governments and central banks to assume responsibility for achieving and then sustaining macroeconomic stability. If they do so, the role of the IMF and the World Bank will become one of support rather than leadership. Most governments and central banks recognize the need for prudent and sustainable macroeconomic policies. Most also recognize that without responsible macroeconomic policies there can be no growth and prosperity.

For countries in the region to bring about local ownership of their financial programs, they must first design, develop, and implement policy tools specific to their technical capacity and needs. While gaps in technical capacity may remain between regional countries and the multilateral agencies, countries must begin to contend with those agencies on an equal footing in the domain of financial programming. This gathering signifies the start of such a process.

Over the past two years, the Reserve Bank of Malawi has worked hard to develop systems and tools for improving macroeconomic policies. Another important reason for this conference is to share Malawi's own progress and accomplishments and to learn from the experience of other countries in the region who are implementing financial programming in one form or another.

The immediate catalyst for this workshop has been the near completion of research studies on monetary and financial programming in Malawi and Tanzania under the sponsorship of the Public Strategies for Growth and Equity (PSGE) program of the Equity and Growth through Economic and Social Research (EAGER) project. *[This program, funded by USAID, would be described by Clive Gray from HIID in the following presentation.]* What is interesting in this regard is that the original idea was to convene a joint Malawi/Tanzania meeting to share their respective results. Then a better idea was proposed: to convene a multilateral meeting

on the subject. After all, the countries in the region face similar problems with regard to macroeconomic stability and financial programming.

Although some countries represented at this conference may be further ahead in implementing FP methods in one form or another, all of those assembled and their respective institutions can benefit from sharing experiences, problems, and concerns. These discussions should help every country to move ahead more effectively in strengthening the design of monetary and fiscal policies. If this effort is successful, it may be possible to transform the region into a leading center for growth in the new millennium.

Opening Comments

C. Gray

The EAGER project, a USAID activity underway for four years, has been conducting applied research that would be of use to African policymakers in the process of economic reform. This research is being done largely by African researchers, with some assistance from the two American consortia responsible for executing the project. It was through its role as lead institution for PSGE (one of the two research themes under EAGER) that HIID initially supported comparative studies in macroeconomic management—studies which have lead, ultimately, to this workshop.

In the early stages of EAGER/PSGE implementation, Bruce Bolnick and I visited several African countries to assess needs for macroeconomic research. Among the countries visited, many of which are represented here today, it was apparent that the reforms taking place necessitated the creation of new capacity in their central banks and monetary authorities. Much of the direction for countries' macroeconomic management was coming from the IMF, and it was not clear that this was a desirable arrangement.

Macroeconomic studies in Tanzania and Malawi funded under EAGER/PSGE focus closely on issues of implementing financial programming. It has been fortuitous for the Malawi activity that Bruce Bolnick was able to relocate to Malawi and help the RBM implement an FP model under the Malawi Economic Management and Reform Project (MEMAR), also funded by USAID.

We have received support from all quarters in our efforts to implement better monetary management through financial programming. For example, when we discussed this work with the IMF, they were very supportive. Most useful, however, has been the support within the partner institutions—most notably RBM—that has manifested itself through a commitment of staff and funding resources and through effective adoption of the FP model.

This is the first EAGER Regional Conference to focus on a single issue; ideally, the

conference will help to extend experience with FP among countries of the region.

Welcoming Remarks

T. Kalebe

Principal secretary for economic affairs of the Ministry of Finance, Mr. Kalebe welcomed participants on behalf of the secretary of the treasury. Noting that the workshop had attracted many participants from central banks and finance ministries of neighboring countries, Mr. Kalebe welcomed all and wished the group success in sharing experiences that might facilitate adoption of financial programming and lead to better macroeconomic management in countries of the region.

As noted by Deputy Governor Ngalande, Malawi's current FP focus is to develop local capacity for determining policy parameters. Government especially wants a greater capacity with respect to those parameters that are important prerequisites in meeting short- and medium-term macroeconomic targets. Such targets are essential to the creation of a stable macroeconomic environment which, in turn, is a fundamental requirement for private-sector growth.

Macroeconomic instability, manifested by high inflation and misaligned exchange rates, slows development by making countries less attractive for investors. Lower investment then tends to keep unemployment high. To avoid these outcomes countries must, among other things, maintain sound fiscal and monetary policies. Financial programming is an effective tool for helping to ensure that such policies are implemented, and it is to be hoped that by employing this tool Malawi will achieve better macroeconomic management.

The job of the Ministry of Finance is to improve the quality and composition of public expenditure while yet generating enough revenue to dispense the budget. To better achieve this, government is currently implementing the medium-term expenditure framework (MTEF), which aims at improving expenditure control through prioritization and more-efficient income generation. The latter entails tax reforms aimed at enhancing revenue and improving equity in the distribution of the tax burden. To meet the new expenditure targets under MTEF, the Ministry of Finance has developed a revenue-forecasting model that will allow the government to better anticipate shortfalls, and its payments position in general, before troublesome circumstances are imminent. This model, parallel with the Reserve Bank's FP model, is another example of Malawi's continuing effort to improve macroeconomic management in general and fiscal prudence in particular.

Mr. Kalebe closed by thanking the conference organizers, in particular the Reserve Bank of

Malawi, Bruce Bolnick, colleagues from the University of Malawi, the National Economic Council, and the Ministry of Finance. He also thanked participants for attending and encouraged them to exchange ideas and views to the fullest during the workshop. The principal secretary pledged himself to doing nothing less in the course of his own participation over the ensuing two days of the conference.

Session 1
Foundations: Financial Programming and Macroeconomic Consistency

Chairman:	G. Mthindi, University of Malawi, The Polytechnic
Speakers:	B. Bolnick, HIID/MEMAR and RBM
	M. Ganiza, Reserve Bank of Malawi
Discussants:	F. Mwega, AERC
	J. Sulemane, Ministry of Planning and Finance, Mozambique
Rapporteur:	K. Mulwafu, Reserve Bank of Malawi

B. Bolnick

Financial programming is used in almost all countries, certainly those with an IMF program. A distinction can be made, however, between managing this financial programming domestically and receiving the output of financial programming models from the Fund. As a standard tool of the IMF, financial programming forms the basis for its financial assistance.

It is vital that countries develop the capacity for implementing FP models. The problem cited by the deputy governor in his opening remarks—that of government economists receiving training in the design and use of FP models but returning to the home country to find no framework within which to employ this training—is central to arguments for developing greater home-grown capability in financial programming.

Financial programming does not have to be complicated, although it can be. For example, early in the EAGER project the PSGE team was seeking partners for research in financial programming. Conversations with another researcher in the Kenya Treasury revealed a structural econometric model that had about three hundred equations. While very complete, this model was never effectively employed by the Treasury for anything because it was too complicated.

On the other hand, an FP model may be just a single page but still work very well. Refining a financial programming model requires that experience be obtained over time; the IMF, for example, began developing its financial programs in the 1950s. Countries should expect to start with a simple model and then develop greater precision over time.

Financial programming provides a quantitative method for determining policy targets

consistent with explicit macroeconomic objectives and with assumptions about the structure and performance of the economy. Financial programming allows policymakers to maintain consistency when setting macroeconomic targets and to see more clearly the results of different expectations about inflation, reserves, and gross domestic product (GDP) growth rates.

The standard FP model pursues macroeconomic stabilization using a set of accounting identities:

- The external balance, wherein macroeconomic policy and exchange-rate policy are consistent with achieving target foreign-exchange reserves
- The internal balance, wherein growth of aggregate demand conforms to the growth of the money supply and the target inflation rate

Operationally, the FP methodology takes the form of a five-step program in which policymakers—

1. Specify target values for such objectives as inflation and foreign exchange reserves.
2. Project values for variables that are exogenous to the model, such as inflows and outflows of international financing and export prices.
3. Derive values for macroeconomic variables that will obtain, given the projections arrived at in steps one and two.
4. Determine permissible growth in the money supply, and develop targets for both public and private credit expansion.
5. Determine financing available for the fiscal program.

As an institution chartered to help countries cope with their fiscal and monetary imbalances, the IMF clearly needs a quantitative methodology for ensuring consistency across its targets and assumptions. It is also clear that governments of countries receiving such support could benefit if they could assess the accuracy of assumptions and the desirability of targets used in these models. For too long, many countries in the region have let the IMF do most of the analysis. When countries leave the establishment of fiscal targets or growth targets to the Fund, they often end up with a tighter set of targets than might otherwise be practical because the IMF is generally very conservative in setting targets and in its expectations for government behavior.

Here are some factors that have led to IMF's taking the lead in financial programming for countries of the region. First, the Fund has been employing FP models for some time and has the institutional capacity to deploy these models; until recently, countries in the region have not. Second, decisionmakers often lack enthusiasm for the belt-tightening required for macroeconomic stability. And, third, for some countries employing a model that is similar enough to the IMF model to permit a more-balanced dialogue seems to entail adopting the IMF's worldview more completely than they feel comfortable doing.

Against these limiting factors one must weigh the benefits that could accrue to countries if they developed their own financial programs by which to set policy targets and otherwise manage their economies. Home-grown financial programming will strengthen government's hand in negotiations with the World Bank and IMF; it will help to generate more-practical programs; and, at the very least, it will enhance local ownership of the macroeconomic policy targets. Even if a country planned to go forward without the IMF or World Bank, a need still exists for some sort of financial program in order to maintain macroeconomic stability.

Allowing the IMF to establish targets without more-complete participation by economists in the target countries carries certain costs. In the case of Zambia [1994], the Fund's technical analysis produced a large financing gap in the fiscal program which, under IMF prodding, government addressed by reducing expenditure and raising tax rates (reversing two years of tax-rate reductions to stimulate growth). Was the large fiscal correction actually needed to achieve the intended program targets? Or was the fiscal gap an artifact of the technical assumptions the Fund adopted in its FP analysis?

Supposing the program had assumed (a) a slightly smaller *rise* in foreign exchange reserves; (b) a bit less depreciation of the real exchange rate; (c) a smaller but still robust target for growth of credit to nongovernment; (d) a decline in velocity to the level achieved before inflation hit triple digits in 1992; and (e) a target of zero-net nonbank borrowing in *real* terms, rather than nominal terms. Under this set of plausible assumptions, the allowable net bank credit to government for 1994 would have been higher by 1.6 percent of projected GDP—with no difference in the inflation target. Instead of requiring a counterproductive hike in the sales tax, the program would have had room for further tax *reductions.* The point here is not to argue for a particular set of assumptions but simply to show how important the assumptions can be.

[Quoting from his paper, *The Role of Financial Programming in Macroeconomic Policy Management]:* "Options that are irresponsible must be ruled out by any government seriously concerned about achieving macroeconomic stability and establishing a reputation for credible policy management. The issue at hand is the importance of taking command of the technical work which determines the program targets, in consultation with the IMF."

M. Ganiza Malawi

Martin Ganiza, assistant division chief at the Reserve Bank of Malawi, presented a discussion of the country's recent shift in management of its monetary programming. The period of focus captures Malawi's adoption of an explicit FP model and thereby provides practical information about the adjustments required by such a shift.

In the past, the Central Bank's role was to collect data for the IMF. While RBM made some

projections as part of a monetary survey, these lacked explicit testing under different assumptions and thus could not compete with IMF projections when those were under debate. Because of the lack of skills and, perhaps, governance issues, the Bank analysis did not fully address the implications of changes in key macroeconomic parameters and was therefore of limited usefulness.

Underlying the old methodology for monetary projections were a number of problems. Principal among these was that (a) the velocity of money growth was not thoroughly examined; (b) the implications of changes in such key parameters as inflation and import cover were incompletely examined; and (c) the budget deficit was set independently of developments in the financial sector.

Under the MEMAR and EAGER projects, however, a new model has been developed and is being institutionalized at the RBM. Entitled the "macroeconomic consistency model," it links all four major macroeconomic accounts through a set of equations and a spreadsheet database. By enforcing consistency across the macroeconomic parameters measured in this model, it is possible to examine the full range of effects that would obtain if targets were changed.

Although still a work in progress, the model allows policymakers to examine outcomes under "what-if" scenarios and provides a framework for undertaking econometric analysis to test the accuracy and improve the precision of estimated coefficients. In the first stage of model development, a database system was set up with institutionalized procedures for updating and checking monetary accounts, fiscal data, foreign exchange transactions, and macroeconomic data. The second stage involved econometric estimation of inflation, money demand, the import function, and GDP.

Already the new model has proven useful. When IMF representatives were most recently in town, they were receptive to alternative scenarios proposed by RBM based upon the macroeconomic consistency model. Fund staff commended RBM for its efforts in developing the FP model, and the tenor of the ensuing negotiations involved significant give and take.

Discussants

F. Mwega

Prof. Mwega, who represented AERC, generally agreed with both presenters and commended the efforts described for creating the FP model in Malawi. Indeed it is not good to depend upon FP models generated outside the country. Along with benefits derived from local knowledge of the national economy, an in-country exercise helps to create capacity within central banks or ministries of finance. Local models could form a good basis for dialogue with the IMF. Getting good variables helps to avoid spurious results; hence, the need

for capacity building.

The FP model itself would benefit from a more-explicit approach to such issues as growth and poverty alleviation. The model should be viewed within the wider context of the real economy (i.e., projecting the path from stabilization to growth). There is trade-off in the model when trying to achieve stabilization. Under the fiscal restraint required by stabilization programs, infrastructure expenditures and investments in human capital are constrained, very possibly leading eventually to lower growth rates. How does one set the parameters for the model in such a way as to achieve the desired balance between these trade-offs?

J. Sulemane
An economist with the Ministry of Planning and Finance, Mozambique, Mr. Sulemane endorsed the need to generate home-grown financial programs. He recommended the FP model be reconfigured to take into account structural constraints along the lines of the three-gap model.

Responses

B. Bolnick: There may indeed be some trade-off between stabilization and growth, especially if the macroeconomic targets are excessively tight at the expense of investments in human capital. Structuralist factors need to included, but extension of the formal modeling will evolve with time.

M. Ganiza, agreeing with the comments raised by the discussants: Most of the problems RBM currently faces with respect to the FP model stem from a lack of data. There is a lot "noise" in the data, and this undermines the results. Naive models with parameters set on the basis of judgments and past trends could, in the future, be replaced by econometric models.

Discussion from the Floor

Gray reiterated the consequences of poor target setting by the IMF and asked participants to share examples of this from their own countries' experiences with the Fund.

Kihangire: It would be good if greater detail could be provided on Malawi's experience in operationalizing the FP model, with particular regard to how RBM ensures adequate, accurate, and timely data for the model.

Ligoya to Mwega: Can countries in Africa use the money demand model you developed with Tony Killick? *Mwega:* The model is stable in Kenya and could be tested for other countries; also, a forthcoming book based upon this work lays out in more detail how countries might wish to choose from among the possible models.

Bolnick: Money demand models for countries in the region are normally not very stable due to structural changes, such as shifting from controlled interest rates, and to poor data. The model needs to produce robust results for policy analysis.

Mwega: To ensure good results, other institutions need to become involved with the FP process.

Session 2
Macroeconomic Projection Methods: Report on the EAGER/PSGE Studies

Chair:	C. Gray, HIID, EAGER/PSGE
Speakers:	R. Mangani, University of Malawi
	J. Masawe, Bank of Tanzania
	J. Nyella, Bank of Tanzania
Discussants:	H. Taye, University of Malawi
	M. Okeyo, Kenya Ministry of Finance
Rapporteur:	O. Nkuna, Reserve Bank of Malawi

R. Mangani Malawi

R.D. Mangani's report, sponsored by USAID's EAGER/PSGE project, examined Malawi's experience in improving the framework for financial programming. The study was undertaken by the University of Malawi in collaboration with the Reserve Bank of Malawi, Ministry of Finance, National Economic Council, and HIID. Serving on the research team were E. Silumbu, R. Mangani, S. Munthali, M. Ganiza, P. Ligoya , M. Masiye, E. Chilima, S. Mtonakutha, P. Zimpita, and B. Bolnick (advisor).

The study's overall objective was to provide technical support to RBM in developing an operational framework for financial programming. The analysis focused on identifying simple methodologies that could be used to project macroeconomic variables needed for the FP model.

Using both domestic and international data sources, the study examined real output, inflation, broad money demand, import demand, the real effective exchange rate, the money multiplier, and tax revenue. [Data sources were the Reserve Bank data management system (the major source), Economic Report, Financial and Economic Review, National Statistical Bulletin, National Small-holder Farmers' Crop Estimates, National Economic Council Macroeconomic Data Bank, International Financial Statistics, and Food Early Warning System (FEWS) Databank.] The researchers primarily used quarterly time series data, except for the inflation and money multipliers models where higher-frequency data (i.e., monthly data) were used.

The study experienced several data-related limitations. For one thing, the *lack* of data posed a significant hindrance, although in some cases the team used theoretically acceptable proxies; in several cases, however, certain structural variables had to be omitted. Sometimes, newly developed data were unavailable to researchers, an example of this being quarterly GDP data. It should be noted that some variables had to be omitted in the models because time-series data could not go beyond fourth quarter/1997. Apart from the problem of data availability, the tax revenue models were characterized by small sample sizes, rendering results unreliable for statistical inferences.

It is important to note that the econometric analysis undertaken in this study was only exploratory; therefore, refining data and retesting models will be an ongoing process. In addition the study used simple, single-equation methods. First, the naive techniques currently used or potentially usable were identified for each variable, and appraised. The models were then estimated using various econometric specifications: time series, structural, and/or a combination of both. The models were evaluated on the standard diagnostic tests (statistical and theoretical significance tests, goodness of fit, and selected residual characteristics). For forecasting purposes, formal forecast evaluation criteria were used. The recommended model for each variable was chosen on the basis of its forecasting ability relative to competing models as well as its consistency with theory.

Here is what the researchers found:

1. Estimations of real output undertaken for the study used robust equations that explained 80 to 90 percent of the variability of real GDP.
2. The models forecasting changes in the consumer price index (CPI) had good predictive ability in the very near term (monthly) but did less well in the medium term, where they would be needed for financial programming. The models seemed to explain about 60 percent of the variance in actual change.
3. The model used to estimate demand for money explained 90 percent of the variability of the dependent variable and seemed to be stable over time.
4. The model used to estimate demand for imports was more accurate on a monthly basis than the one currently in use.
5. The model used to estimate real effective exchange rates was less robust than the naive model currently in use.
6. The model used to forecast the money multiplier explained over 80 percent of the variance in the dependent variable and produced much better forecasts than the naive model.
7. The model forecasting revenue was still in the exploratory stage.

Because of the numerous data constraints in the research undertaken, much work remains to be done. Specific areas of focus for further research include the following:
! Constraining the analysis to very simple models

- Using other forecast periods (to achieve different results)
- Examining other important macroeconomic variables, e.g., interest rate and credit to nongovernment, with regard to their determinants

J. Masawe and J Nyella Tanzania

The study's first objective was to provide central banks and finance ministries with data that help them improve their tools for predicting the economic impact of alternative monetary policies. The second objective was to strengthen central bank capacity to persuade policymakers of the importance of fiscal discipline and monetary stability.

As a first step in implementing this study researchers carried out an extensive literature review on theory and policy, identifying key variables and specifying the relationships among these variables. Next, data on the key variables were compiled and put into a format that permitted analysis. Finally, the model was more completely specified and then estimated with the available data.

The model was estimated using quarterly data spanning the period from 1986 to 1997. Due to an absence of quarterly data, annual figures were interpolated for income, consumption, and investment. The preliminary results were as follows:

1. *Consumption equation.* Only lagged consumption was found to influence current consumption. Consumption was found to be inelastic to interest rate, and the sign of the coefficient was unexpected.
2. *Investment equation.* Income growth, government expenditure, and aid do influence investment as hypothesized. Real interest rate had the expected sign.
3. *Output equation.* Real money supply, exchange rate, and aid had perverse results.
4. *Export equation.* There was a negative relationship with domestic income and a positive relationship with exchange rate.
5. *Import equation.* Current exchange rate had a negative sign, while income and aid had a positive sign.
6. *Demand for real balances.* The team found the expected results on inflation but perverse results on the interest rate.
7. *Domestic price.* This is positively influenced by the nominal exchange rate and foreign price and negatively by real money balances.
8. *Domestic interest rate.* Money and movements in the exchange rate and foreign interest rate significantly influence domestic interest rates.
9. *Tax revenue.* Normal tax bases, imports, and private consumption are significant.

Because the model is still at the exploratory stage, it may be premature to draw policy implications from it. Data-measurement issues, particularly relating to definitional breaks in

time-series data, need to be further addressed. Also, the model will have to incorporate some mechanism for dealing with long-run relationships among variables.

Discussants

H. Taye

Financial programming combines aspects of both economics and accounting. Because of the importance of the accounting identities that drive FP models, consistency is very important. Thus, there needs to be an estimation technique applicable to most of the relationships. In the case of the Malawi work, there could be a problem in combining coefficients from the long-term equation with those for the short term. Beyond this, the specification of the models seems to be arbitrary and targeting robust results rather than theoretical consistency (i.e., there seems to be a data-mining process going on).

To achieve consistency, a uniform method should be used in converting annual to quarterly figures. For GDP estimates, the production index used for Malawi is not appropriate, since the economy is agricultural based. It would be a good idea for the research team to follow specific criteria for evaluating the forecasting ability of the models.

M. Okeyo

It would be difficult to overemphasize the importance of collaboration among various institutions involved in macroeconomic management in FP exercises. Ideally the good efforts taken under the two studies in Malawi and Tanzania will be sustained over time so they continue to bring improvements to the FP efforts of those two countries.

In regard to unexpected results, these are likely attributable largely to the unreliability of the data used; the solution here is to enhance the operations of institutions charged with collecting and keeping accurate data.

Discussion from the Floor

Masawe: The Tanzanian real sector model had contradictory results from the theoretical underpinnings, and the team therefore tried to determine to what extent parameters obtained from these models could be relied upon. We need to develop *a priori* criteria for the choice of model specification and estimation techniques. Development of the model should start from the simple, and then—only as more precision becomes possible—tend toward the more complex.

Nkalamo: Was any attempt made to carry out stability tests in the models, e.g., the money demand function, given the fact that the FP model presupposes a stable money demand?

Koori:

- Data collection is a problem for most African countries.
- Tanzania included almost the same variables as in Malawi but discovered that money stock had an insignificant effect on output.
- Simple ARIMA models yield good forecasts, but Mangani said many of the simple models performed poorly. He did not say, however, how they performed in terms of forecasting.

Mthindi: Since the objective is to choose models with high forecasting power, researchers should use ARIMA models rather than combining with structural ones. In addition, the models should be linked to each other for simulations.

Kihangire: How was the research presented in the session received by the IMF?

Mwega: Real output is typically estimated using the production function, which is itself a function of labor, capital, etc., but capital stock is not included in the model. On shifts in monetary regimes, researchers should introduce variables that take into account periods of control and no control. It would be good to introduce more lagged variables into the model. Agree with Mr. Masawe that the development of the model should be that of general to specific.

Wemba [to Taye]: Please elaborate on the methodology of interpolating annual GDP to quarterly estimates.

Responses

Mangani

Because of the scale of the research, only the summary was presented here. Answers to some of the questions raised in the discussion can be found in the technical papers, which are much more detailed.

On the need for the estimating technique to be consistent: Most of the models were ARIMA processes.

On the criticism of arbitrary specification: The variables used in the structural models and their relationships to other variables were backed by economic theory.

On the output function: The technical paper attempted to estimate the production function by using a proxy for capital which is domestic credit to private sector.

On modeling: Taye's view was that of starting from specific to general, conflicting with Mwega's of starting from general to specific. In the study it was from simple to complex.

On the test of stability for money demand: This was done, and money demand was found to be stable over the period used.

On combining time series and structural coefficients: The study began with general and moved toward the specific and then estimated structural relationships.

Mr. Mangani agreed that equations need to be linked to each other for simulation purposes.

Nyella
Structural models were used because of their capability for linking all accounts.

Agreed that forecasting ability should be used as a criteria for judging the model's usefulness. Also agreed to explore more-accurate approaches for developing quarterly estimates from annual figures.

On the output function: The importance of investment in economic growth is important; however, due to data unavailability we could not include capital in our model. Perhaps this issue will be explored in future research.

Session 3
Status Reports on Financial Programming in the Region

Chair:	B. Bolnick
Panelists:	C. Koori, Bank of Kenya
	T. Wazella, Bank of Mozambique
	K. Nkalamo, Bank of Zambia
	D. Kihangire, Bank of Uganda
Rapporteur:	C. Msosa, Reserve Bank of Malawi

C. G. Koori — Kenya

The main assumption in Kenya's financial program, which predates the IMF's suspension of aid in 1987, is that if the Central Bank can control base money, it can control the money supply, GDP, and inflation. The key parameter in the assumption is the money multiplier. By influencing the money multiplier, the Central Bank can influence commercial lending and, hence, the money supply. Inflation can also be influenced in the same manner through demand for money, which is nominal GDP/income velocity. In the program, the Bank of Kenya uses the accounting identity approach wherein the liability side of the Central Bank balance sheet equals the asset side. And the reserve money target is determined by setting GDP and inflation targets.

When annual targets are determined, they are broken down into monthly and even daily targets. For example, the annual target in change in reserve money is divided by 12 months to get the monthly change in reserve money. The same approach is applied to pursue daily changes in reserve money. This helps the Central Bank make daily estimates based upon balance sheet information. And by monitoring daily flows among the central bank, commercial bank, and government, one can determine the current position and expected position for tomorrow.

It is important to take note of transactions that increase or decrease liquidity. These are reflected in central bank and commercial bank balance sheets. Repurchase agreements are used to facilitate the transactions through buying and selling of securities; reverse repurchase agreements and overdrafts are also used. In addition the Central Bank may purchase foreign exchange from interbank markets. It can redeem government securities when they fall due. It can discount government securities. It can also pay interest on Treasury Bills. Liquidity may also be increased through changes in government deposits, e.g., through payment of teachers' salaries. All these outflows (injections) are netted out from total inflows such as primary auctions, tax receipts. It is important to note that transaction profiles differ from day to day.

After obtaining the net injections (outflows), the latest reserve money position is held against the reserve money target. Any discrepancies are traced to assess whether they are short- or long-term problems. If indicators reveal the interbank market to be flooded, the Central Bank does not go into the market.

The problem with reserve money is lags in data from commercial banks. Currently, banks are requested to submit returns within 10 days, but this has yet to begin. When in place, however, this mechanism will allow for monitoring of liquidity in the interbank market.

T. Wazella Mozambique

The Bank of Mozambique first affiliated with IMF in 1994, when economic structural-adjustment facility (ESAF) programs started. Several factors necessitated implementation of financial reforms, including unsustainable balance-of-payments deficits, high government budget deficits, low economic-growth rates, and high inflation.

In Mozambique, monetary programming targets inflation, real GDP growth, and the external position with respect to foreign reserves. The program uses the MV-PQ approach wherein change in money supply times change in velocity of money is equal to the change in prices times the change in output: $(1+dM)(1+dV) = (1+dP)(1+dQ)$.

After the money stock is calculated, it is applied at both macro and micro levels. At the macro level, M2 is defined as net domestic assets (NDA) plus net foreign assets (NFA). NDA is

made up of domestic credit (DC) minus government earmarked funds (GEF) minus other items net (OIN), or NDA = DC - GEF - OIN. At the micro level, credit has formerly been allocated through various direct controls but, since 1994, has been based upon the deposit-mobilization capacity of commercial banks. In this regard, the Central Bank is able to set clear limits on NDA growth.

When Mozambique's FP system was initially conceived, there were only three banks operating, two of them state owned. With liberalization of the financial sector, new banks have entered and competition has increased. Because of credit controls the Central Bank exercises, banks have sought ways to get around their ceilings. However, financial discipline improved in the sector after the state-owned banks were privatized.

Vital to the success of FP in Mozambique is banking supervision. The Bank of Mozambique has improved its prudential regulation and its bank supervision. Monthly meetings take place between the banks and the Central Bank, and these are used to keep both sides apprized of recent developments in the financial system. These meeting also provide an easy way for the Central Bank to inform commercial banks of the importance of complying with NDA targets.

K. Nkalamo Zambia

Unlike Malawi and Tanzania, Zambia is very much behind in terms of financial programming, and assistance such as that being provided under USAID's EAGER Project will be most welcome.

At the moment, Zambia uses simple relationships and identities in programming. Programming in Zambia looks at objectives, exogenous variables (such as export prices and net foreign financing), and derived variables (such as projections of exchange rates using purchasing power parity, i.e., domestic versus U.S. inflation). The Bank of Zambia projects nominal GDP by targeting real GDP and applying an estimated deflator. The target for money supply is projected using the quantity theory of money and assuming a constant velocity. Credit to the private sector is derived as a residual, and reserve money assumes a constant money multiplier.

Lastly, the Bank sets its monetary targets, which are agreed upon between the Bank of Zambia, Ministry of Finance, and IMF according to what is realistic and achievable. Net foreign assets of the commercial banks are projected using historical data and proportions.

The Bank of Zambia follows a monetary policy based upon reserve money and performance (policy) variables. The ceiling on net bank claims on the government is influenced by net balance-of-payments support that takes into account external debt service and capital inflows. *[While government has agreed to increase Bank of Zambia staff dedicated to financial programming, Mr. Nkalamo noted that he was currently working alone in this area.]*

D. Kihangire Uganda

In Uganda the FP framework is agreed upon by all concerned parties: politicians, donors, government, institutions, and those affected by the policies. Policies are discussed at length and designed to take into account sensitive issues. The financial program links all sectors of the economy—fiscal, monetary, external, and real.

Uganda emphasizes sustainability. Fiscal deficit/GDP ratios are assessed in tandem with poverty-eradication goals. The current account deficit as a ratio of GDP is targeted at between 8 and ll percent, excluding grants. As for the real sector, the emphasis rests upon structural measures. In the monetary sector, the emphasis is placed on inflation targets, which are set at 5 percent.

Actual FP operationalization in Uganda combines both naive and econometric models, with the former carrying more weight. Econometric models are done on exports, imports, and money demand functions. Studies in Uganda have shown that monetary expansion affects inflation with a three-month lag.

In implementing its financial programming, Uganda has experienced problems with institutional arrangements. There are, for example, questions regarding who should take responsibility for what. The Central Bank is responsible for monetary policy responsibility and the Ministry of Finance for fiscal policy.

There is also the issue of coordination between agencies and institutions, and several committees are now in place to facilitate such coordination. At the Central Bank are the monetary policy and financial markets committees, which meet monthly; the Ministry of Finance maintains the monthly cash flow group and "Friday Prayer Breakfast" committees.

Using information from these committees, periodic appraisals are made on the financial program. Positions at every month-end are reviewed relative to the quarter, based upon as much information as possible. This review helps to avoid deviation from targets. As a result, inflation has been at single-digit levels since 1993, and GDP growth at about 6.5 percent (sometimes going as high as 10 percent but then dropping down to 5 percent in drought years).

In the past the external sector experienced huge imbalances, but the position is now sustainable; however, the sector is not growing fast enough.

Uganda still faces a number of challenges, with poverty first among them. A number of poverty-eradication programs now underway emphasize health and primary school education. The second most pressing challenge is accountability and transparency. Although these

challenges are major stumbling blocks, Uganda currently enjoys a supportive macroeconomic environment under both its financial program and its privatization regimes.

Discussion from the Floor

Participants wondered if some countries pursued IMF targets that were unrealistic. In Uganda the IMF imposed unrealistic conditionalities in 1987, and targets were premised on donors disbursing funds that never materialized. The problem was later resolved by using adjustments in the benchmarks. Participants also questioned whether low levels of fiscal deficits eradicate poverty and what is a sustainable fiscal deficit.

Response

The relationship between fiscal deficits and poverty is indirect, and it is important to be conscious of how deficits are funded. There is also a need to take advantage of available donor support to eliminate fiscal imbalances.

Session 4

Database Requirements and Database Management

Chair:	F. Mwega, AERC
Speakers:	P. Ligoya, Reserve Bank of Malawi
	J. Nyella, Bank of Tanzania
Discussants:	M. Kanyuka, Malawi National Statistical Office
	K. Nkalamo, Bank of Zambia
Rapporteur:	K. Mulwafu, Reserve Bank of Malawi

This session presented a description of the database systems used by the Reserve Bank of Malawi and the Bank of Tanzania. Although the two systems have very similar features, they use different software packages.

P. Ligoya Malawi

The development of Malawi's FP database began in 1997, with assistance from the MEMAR project. It was widely agreed that Malawi should have its own database for better policy planning and greater capacity in macroeconomic analysis.

Malawi's database system is in its final implementation stages. When it is sufficiently established, the database is expected to become available to users beyond RBM staff. Plans

include distributing the database to the University of Malawi, the National Statistical Office, the Economic Planning Commission, and the Treasury. Data will also be posted at RBM's Web site on the Internet. Security requirements include, importantly, that people not be able to change the numbers in the database unless properly authorized.

[Mr. Ligoya then provided a demonstration of the database system, which is based upon two linked MS Excel notebook files.] One notebook contains the financial program model and the other contains the data. Users may specify assumptions and projections for exogenous parameters. Once these assumptions are specified, the model computes and reports calendar-year projections of the main macroeconomic variables, quarterly or monthly projections, and variances between actual and projected performance over the program period.

The model generates a summary page showing the main assumptions and parameters and the resulting macroeconomic projections and policy targets. One can also graph data and make customized reports with the system. Such capabilities make examining different scenarios very convenient. The FP model notebook is a powerful tool for economic analysis in this and other respects.

Discussion from the Floor

Bolnick: How skilled is the data-entry process, and how does the system attempt to validate data?

Kanyuka: Can other people outside the RBM be granted rights to change figures?

A participant from MEFMI: Is the database system developed by Reserve Bank of Malawi free of duplication? Given that other databases are already being kept that track macroeconomic variables, do figures acquired from such sources need to be manually keyed in again, or are these systems compatible enough to share information electronically?

Responses

Ligoya to Bolnick: After the final touches have been made, there will be a continuing need to vet the figures with the persons responsible for updating the data.

Ligoya to Kanyuka: Figure-changing can be done only by officials at the RBM. If, for example, a mistake in the figures were found, it is better to communicate with RBM staff and have them make the change than to open the system to outside changes. On the other hand, feedback is encouraged for system refinement.

Ligoya to MEFMI participant: In the start-up phase of the FP database, data sets have been created manually. In the future, however, there will be a clear benefit to linking this system to the other data sets so that available figures may be electronically transferred.

J. Nyella Tanzania

Describing the database system developed by the Bank of Tanzania, Mr. Nyella stressed the point that good financial programming requires adequate quality data. After receiving some direction from the IMF, the Bank of Tanzania created a database, acquiring a time-series package capable of linking to an MS Excel data file. It is possible to do some regressions in this system, and one can account for seasonal variability.

As was the case with the RBM, the database developed by Bank of Tanzania has not yet been extended to other institutions. However, efforts are underway to allow sharing of information with other institutions and agencies. Within Tanzania, this will be limited by technology and compatibility issues. Unless all countries agree upon a uniform package, sharing within the region will be a problem.

Discussion from the Floor

Kanyuka: Due to financial constraints, most bureaus of statistics do not produce quality data in a timely manner. Central banks must come to the rescue through financial support.

Chuka: Indeed, problems with financial support have affected data from the Bureau of Statistics; this issue is high on the agenda in Southern Africa Development Community (SADC) meetings.

It was noted that in Tanzania, the Bureau of Statistics is being converted into an executive agency that sells its output to users. This represents an opportunity for institutional cost recovery.

Session 5
Institutional and Operational Issues: Systems, Procedures, Responsibilities, Training

Chair:	T. Wazella, Bank of Mozambique
Presenters:	P. W. Mamba, Reserve Bank of Malawi
	D. Kihangire, Bank of Uganda
	C.M. Deredza, MEFMI
Rapporteur	C. Msosa, Reserve Bank of Malawi

P. Mamba Malawi

First and foremost, the FP model and database are very much a collaborative enterprise. By working with the Ministry of Finance, National Economic Council, and National Statistics Office, a great many efficiencies can be achieved. Because all of these institutions are involved in economic management, it is reasonable for them to pool their resources. If they failed to adopt the FP consistency model, the policy and management efforts of these institutions would be pulling in different directions

Since most of the econometric work in the financial program was done by local technicians from the above institutions, there is a strong sense of ownership in the program. The Reserve Bank of Malawi currently has a core group of database officers headed by Mr. Ligoya, Mrs. Wemba, and Mr. Ganiza. These staff are in the forefront in data updating and, through them, management can check the accuracy and consistency of the data. Plans are being discussed to bring representatives from the National Economic Council, National Statistics Office, and Treasury into this core group. For the actual updates of the database, officers will be designated and given passwords to access the system. Responsibilities are split according to sections, i.e., balance of payments, money and credit, prices, and fiscal issues.

As was previously discussed, the financial program model is contained in an Excel notebook linked to a second notebook with the data. Bruce Bolnick trained the core group and other members of the Research department in the use of these packages, and there will be further training in the future. The idea is for the core group to be able to navigate the financial program without any difficulties, seeing formulae and links as well as identifying bugs.

Plans are in the pipeline to link the database with commercial banks and other institutions such as the Ministry of Finance. A Web site has also been developed so that people can access the database. The financial program will, however, not be on the Web site.

D. Kihangire Uganda

In Uganda, the financial program is designed to satisfy the requirements of many entities: the Ugandan government, the Central Bank, the World Bank, the IMF, and other multilateral and bilateral donors.

A number of institutions share responsibility for the operationalization process. The Bank of Uganda concentrates on monetary issues, and the government—through the Ministry of Finance—addresses fiscal policy management. Also a part of this process is ongoing training aimed at improving data management, including data tracking, storage, checking, and retrieval.

Uganda has had a large number of conditionalities placed upon its macroeconomic management, and these represent a challenge for both central bank and government policymakers. Because the money is needed and will not be disbursed without all parties meeting these conditionalities, donors have been involved in the development of Uganda's financial programming. While the Bank of Uganda has held a leadership role in the process, the donors (including the IMF and World Bank) share some responsibility when programs fail or succeed.

Fiscal management is, at its highest level, determined during the course of frequent meetings the president calls in order to discuss macroeconomic issues. Since 1993, the Bank of Uganda has been independent of direct government control, with Bank management accountable to a board of directors. The Bank is independent in the conduct of monetary policy as well as in bank supervision.

The most senior policymaking group at the Bank of Uganda is the Monetary Policy Committee, which meets monthly. The Financial Markets Committee meets daily to discuss money markets, exchange rates, base money, etc. In addition, representatives of the Bank of Uganda attend monthly Cash Flow Committee Meetings, at which they share impacts of fiscal and monetary policies and see how these augur with the financial program. An important purpose of these meetings is to enhance coordination among institutions and agencies. The Balance-of-Payments Committee meets monthly to review Uganda's external position and aid flows. And, on a weekly basis, a committee drawn from the Ministry of Finance and Bank of Uganda (the Breakfast Prayer Committee) also meets.

The challenge we face in Uganda is that of completely freeing monetary policy from political pressures. Although the Financial Institutions Statute and the Bank of Uganda Statute empower the Bank in this regard, credible macro parameters are but part of the story. In the end, private-sector behavior is what really determines economic activity. Weaknesses in money and financial markets necessitate greater coordination between government and the Central Bank, and this has driven the formation of the various committees.

C. Deredza MEFMI

The focus of the Macroeconomic and Financial Management Institute of Eastern and Southern Africa (MEFMI) is one of training and capacity building, both of which entail the implementation of knowledge. In carrying out its mandate, MEFMI assesses specific institutional constraints and then targets training in such a way that people are able to build capacity in their respective institutions. Because member states are heterogeneous, MEFMI uses a phased approach in its programs.

As seen in this workshop, some countries lag behind others in financial programming.

Because MEFMI is user rather than supply driven, it can provide appropriate training across the range of needs implied by these different stages of development. Country needs are assessed and prioritized bearing in mind that basic macroeconomic training is fundamental. MEFMI also takes into account new regional developments such as the financial programming in Malawi.

Currently MEFMI training focuses on eight priority areas:
! Macroeconomic analysisFinancial programmingFiscal policy and expenditure managementMonetary policy and financial surveillanceCapital marketsBalance of paymentsStructural adjustmentDebt management
A sampling of courses offered by MEFMI in 1999 follows. (Plans are underway for more courses during the year 2000.)
! Public Expenditure ManagementMonetary PolicyBudget ManagementMacroeconomic ProjectionsResearch Skills
Because each country faces different issues, much of MEFMI's work must be country specific. As part of its strategy MEFMI employs a collaborative approach; hence, the networking with member states. We believe that Malawi's FP advancements may create a ripple effect throughout the region and expand demand for assistance in developing similar programs elsewhere.

As part of the region's efforts to obtain some relief from external debt, MEFMI has been helping member states establish important parameters relative to their debt burdens. However, the bottom line is developing local capacity for the complete range of macroeconomic management, a goal which requires the creation of institutional memory in responsible institutions and agencies. MEFMI can do the training, but implementation requires political commitment to macroeconomic stability and the creation of institutions that can ensure this.

Discussion from the Floor

A participant in agreement with the MEFMI presentation: Capacity building is indeed important. When staff are sent abroad for training but bring back skills for which there is no institutional context, problems arise. In addition to capacity building, many of these issues can be seen in terms of sustainability. Training and capacity building must generate sustainable improvements. Given that MEFMI follows a user-driven approach, doesn't it also have to focus on some subset of issues so that it can deliver quality training and capacity building in those niche markets?

Responses

Kihangire, speaking at the institutional level: The African Economic Research Consortium (AERC) has been much involved in Uganda's policy and research at the institutional level.

Mwega: AERC was set up in 1988, with the objective of supporting capacity building in economic research. Although the consortium does no research, it supports research by others, funding about 40 projects every year. Areas of research include poverty and income, trade policy, regional integration, macroeconomic policy, stabilization, economic growth, saving, resource mobilization, and investment. AERC is also involved in a collaborative masters training program whereby universities pool resources to provide training they could not separately provide. AERC is supported by a consortium of donors that includes the World Bank, the Rockefeller Foundation, and others (sixteen donors in all).

Turning to the issue of sustainability, Malawi anticipates no problems when the MEMAR project expires. RBM has already made a trial run of the model and has had occasion to contest some IMF assumptions about macroeconomic variables. The usefulness of the model is widely appreciated, both among the RBM and government, not to mention the IMF.

Because sustainability is an issue in Uganda, a secretariat would be useful for the sake of continuity. Although the Bank of Uganda has benefited from research results supported by the AERC, some evidence suggests that, without deeper financial markets, programs may not succeed.

MEFMI too has provided some assistance to Uganda in this regard, pairing local with foreign expertise as a way of sustaining its capacity-building program. MEFMI has its own secretariat. Given the constitution of this secretariat, the Institution strives to use economists from member states so that the pool of experienced consultants available to work in other countries can be expanded.

Responding to a question regarding local ownership within the context of local institutions and agencies: In Malawi, the RBM has been fully involved in designing the financial program. Because this has been a collaborative effort, other institutions in Malawi also feel the macroeconomic consistency framework to be a homegrown product. Given this circumstance, it may not be necessary to plan for an independent secretariat. There is already, in Malawi, a Cabinet Committee on the Economy.

In Uganda the head of state has a keen interest in matters relating to financial programming, and the governor of the Bank of Uganda together with the minister of finance are called upon from time to time to clarify issues to parliamentarians.

Session 6
From Analysis to Action: Links Between Liquidity Management and Budget Management

Chair : E. Ngalande, Reserve Bank of Malawi

Panelists: N. Nyirongo, Reserve Bank of Malawi
M. Okeyo, Kenya Ministry of Finance
C. Baptista, Bank of Mozambique
D. Kihangire, Bank of Uganda
Rapporteur: K. Mulwafu, Reserve Bank of Malawi

N. Nyirongo Malawi

Generally, the requirement for consistency across economic fundamentals is paired with financial reforms that, among other things, typically aim to improve information transmission from a number of institutions and agencies to the monetary authority. From the perspective of the Central Bank, FP is a tool for determining appropriate macroeconomic and monetary targets and, thereby, implementing liquidity management.

Although targeting the price level is an effective approach, such targets are feasible only if the Central Bank has independence. For many emerging economies, the choice of targets is influenced by inherent rigidities in such alternative instruments as fiscal targets.

Experience in liquidity management at the RBM has been largely positive. In 1987, indirect instruments replaced direct control of credit in the financial system. This was a part of a wider liberalization of the financial system. In 1994, the Kwacha was floated, although some controls were retained on exchange of currencies. In that same year, an auction was instituted for Malawi Treasury Bills.

As a result of these reforms, RBM has had to adopt policies and interventions that affected the markets only indirectly. This has entailed a move to open market operations. A monetary policy subcommittee meets every week to discuss the level of liquidity and how to extract or inject liquidity. The level of liquidity is based upon the level of supply and demand for reserve money. Since FP provides a framework under which supply of and demand for money can be projected into future periods, it is very attractive to RBM as a tool for fulfilling its charter.

M. Okeyo Kenya

In Kenya there has been a large gap between revenues and expenditures. In part because of this gap, a revenue authority has been created; this has left the Treasury with the sole responsibility of fiscal policy.

In 1994, a committee was set up to strictly monitor the budget, and all issues relevant to the budget are discussed in this forum. The borrowing authority of government is limited to 5 percent of its prior-year audited revenues, although because of the lag in audits, the limit is set against accounts that are now two years old. Another adjustment has been banks'

willingness to cash government checks. In the past, government checks never bounced; now, however, there must be sufficient funds on account before a bank will cash the check.

C. Baptista Mozambique

Financial programming takes place at two different levels, one of which is active and the other passive. Tracking and modeling the macroeconomic parameters under a consistency framework is part of the passive level. In this, the Central Bank uses its macroeconomic targets to determine policies for monetary management. Actually managing liquidity through market interventions is part of the active role of the Central Bank.

The Bank of Mozambique has two operational organs that determine and implement these monetary policies and market interventions. The first is the Monetary and Exchange Committee, which meets weekly. This group would benefit from the development of a short-term FP path that would provide the Central Bank with monthly and weekly intervention targets.

The second major organ of monetary policy is the Interbank Markets Coordination Committee, which analyzes liquidity management and reserve money every week. However, banks largely shift liquidity among themselves, and there are lags in the communication of this information. Government liquidity forecasts have also been unspectacular. However, both the Central Bank and the commercial banks are beginning to manage their liquidity better. The Bank uses Treasury Bills and a discount window to implement its monetary program and to manage debt.

D. Kihangire Uganda

In Uganda, targets are set before the beginning of the financial year, and thereafter these are appraised every quarter. Monetary targets are an integral part of the monetary program; other targets include fiscal, trade, and exchange rates and also structural reforms.

The liquidity gap, which is the difference between supply and demand for reserve money, has to be supported by other factors such as exchange-rate movements, weekly monitoring of inflation, and monitoring of interest rates every week through Treasury Bills and interbank lending.

Liquidity is managed through the range of instruments of monetary policy, some of which include the following:
! Treasury BillsBank of Uganda BillsRediscount windowReserve requirement rationIntervention in the foreign exchange market
In managing liquidity, however, a number of challenges face the Ugandan economy; for one

thing the Uganda Revenue Authority collections are sometimes late being deposited with commercial banks. In addition, the money multiplier is changing over time due to deregulation of the financial system. Furthermore, bank failures cause obvious (though anticipated) pressures. Finally, too many targets generate problems in prioritizing among them.

The most fundamental challenge is striking the right balance between poverty alleviation and sustainable growth in base money. While the Central Bank takes a leadership role in determining and implementing targets, the targets must take into account the interests of a broad spectrum of people and institutions.

Comments from the Chair

Dr. Ngalande stressed that one of FP's important strengths is its ability to provide estimates of important parameters, given changes in the targets selected by monetary authorities and others. Under the macroeconomic consistency framework, it is possible for RBM management to sit with Ministry of Finance staff and to quantify the implications of changes in targets for macroeconomic variables. When Finance wants to raise the budget deficit, RBM can show what such an action will imply for the price level. This is a very useful characteristic of the FP model.

Discussion from the Floor

Taye: It is very important that central banks be independent of government influence. As noted earlier, the choice of targets for controlling money supply depends upon the degree of independence central banks enjoy. The choice of policy instrument also depends upon institutional factors, including expectations about which can be more effectively tracked, money supply or money demand.

Bolnick, speaking to Kihangire's point that the money multiplier is unstable: Based upon an examination of seasonality in Malawi, the money multiplier is also rather unstable there. It is preferable that monetary authorities pay more attention to reserve money for liquidity purposes because it can easily be controlled by the Central Bank. Choice of targets is important in controlling liquidity. With respect to liquidity management, it is not feasible to target both money supply and interest rates. Linkages between fiscal requirements and liquidity management are important. Does fiscal policy motivate monetary policy or vice versa?

Mwega: The Asian crisis seems to have affected Africa less than one might have expected. *[To presenters]:* Do you consider that fiscal-deficit projections are improving through financial programming?

Nyirongo in response to Mwega: Low levels of investment have insulated Africa from some of the effects of the Asian financial crisis.

Ligoya responding to Mwega's questions about deficit projections: Malawi has experienced difficulties in forecasting liquidity. The problem is in projecting inflows on a quarterly basis. Sometimes projected inflows do not occur, and this fouls up the model. Malawi has also had problems in forecasting the exchange rate. For example, the forecasts are usually based on the assumption that the real effective exchange rate (REER) will be constant; unless, however, the REER is in equilibrium, one cannot hold it constant.

Session 7
Where Do We Go from Here?

Chair: H. Taye, Chancellor College
Panelists: C. Chuka, Reserve Bank of Malawi
C. Koori, Central Bank of Kenya
J. Masawe, Bank of Tanzania
K. Nkalamo, Bank of Zambia
C. Baptista, Bank of Mozambique
D. Kihangire, Bank of Uganda
Rapporteur: C. Msosa, Reserve Bank of Malawi

C. Chuka Malawi

In financial programming, it is important that objectives be clear. In addition, policymakers need quality advice. The advantage of the macroeconomic consistency model is that it speaks the IMF's language.

On the other hand, continued research is needed to ensure better accuracy and precision in the model; also, the institutions responsible for monetary and fiscal policy need to achieve better coordination among themselves. At the regional level, there is scope for capacity building and sharing of experiences in implementing FP. In the end, monetary authorities will need to redesign work roles within their institutions if they are to benefit fully from FP's strengths.

C. Koori Kenya

In developing capacity for financial programming, we should be moving from naive to scientific modeling. Furthermore, more emphasis should be placed upon data quality. In order to ensure support at the technical level, stakeholders should be brought into the FP exercise.

Financial programs should be continuously evaluated to see if they serve the purpose in terms of the signals sent to the private sector. It is also important that financial systems be stable and that people have confidence in them; otherwise, financial programming cannot work.

J. Masawe Tanzania

Financial programs need to be refined, with shortcomings addressed and data gaps filled. Although macroeconomic data development is very important in financial programming, so is market development and continued market research. Training, capacity building, and special programs for educating politicians also need to take place regularly. As for leadership and ownership issues, the Central Bank should be at the helm.

K. Nkalamo Zambia

Whether or not effective FP implementation is achieved may well hinge upon the issue of ownership. In addition, the effort requires a well-managed database, institutional capacity for implementing targets, and good coordination with government agencies and institutions. Accuracy and timeliness of data are also important; hence, the need for adequate funding to data-collection institutions.

Looking ahead, we see a need for institutionalized coordination at technical and policy levels, and locally as well as regionally. We will need as well to coordinate capacity building through proper training. In addition more resources should be devoted toward data development—for example, continuation of projects such as EAGER and MEFMI.

Finally, models should be incorporated into the economic management process and daily work processes reoriented to incorporate FP models.

D. Kihangire Uganda

Financial programs will need to be institutionalized in our respective countries. These programs should be flexible and their targets reviewed frequently. When necessary, adjustments should be made without delay. We also need to design appropriate sequencing mechanisms for achieving targets. Regional cooperation cannot be overemphasized, nor can the need to develop money and financial markets. Finally, countries will need to create deeper financial markets through better supervision and regulation of the financial sector.

Discussion from the Floor

The point was raised that very little attention had been paid to how a country establishes a balance between growth objectives and growth in the money supply. Another participant noted the need for additional training in order to generate the critical mass needed for FP adoption.

Closing Session

Chair: R. Mangani, University of Malawi
Speakers: K. Toh, USAID/Lilongwe
E. Nglande, Reserve Bank of Malawi

K. Toh **USAID/Lilongwe**

Thanking participants for the effort put forward over the course of the workshop and for the opportunity to speak in this closing session: During the past several hours of presentations and discussion, participants have been impressively willing to take on the tough questions. Although the session titled "Conditionality versus Self-Determination" was dropped due to time constraints, that question has been addressed frankly and practically in the other sessions, and it has been pleasing to sit and listen to policymakers' and research analysts' discussion of it today.

It is clear that FP is a useful tool and one that provides a lot of benefits if properly implemented. Because it satisfies many important prerequisites for achieving self-determination in macroeconomic policy, it should be very appealing to countries in this alone. But FP is not a panacea, and it does have its limitations. While much has been said here about the benefits of FP, it may be useful in this final session to make a few cautionary comments about the challenges that attend its implementation:
! CoordinationInclusionDealing with noneconomic factors
One of the greatest challenges for FP in Malawi is coordinating among RBM, the Ministry of Finance, and the National Economic Commission in implementing FP-based targets. All three institutions will have to work together in order to attain effective FP institutionalization in Malawi. As anyone knows who has tried to coordinate across institutions—each with its own mandate and world view—this is no easy task. To make it happen takes serious commitment from the heads of these organizations.

At the same time, it should be possible for nongovernmental organizations and other private-sector stakeholders to have their say in the establishment of policy objectives and

macroeconomic targets. This will be the challenge of inclusion.

With regard to the challenge of noneconomic factors, these are very much in evidence in the way FP gets linked with the real sector. Because FP allows monetary authorities to more precisely set and track targets, slack in the economy is reduced. Because Malawi's private sector is so suffused with informal enterprises, however, care must be taken that incentives or opportunities for entering the formal economy are not reduced for those enterprises by applying more-stringent targets through financial programming.

Additionally, it can be difficult for FP models to accurately project aid flows over the short term, as was pointed out in an earlier presentation. This can have serious fiscal implications for the government.

E. Ngalande Malawi

In closing the workshop Dr. Ngalande expressed his thanks to the organizers and participants of this very successful event and his pleasure at being involved.

Although the first day of the conference was long—and perhaps a bit tiring because of the volume of information presented—the information from both days has been both practical and useful. All of the economics discussed during this conference has been applied, practical material—precisely the sort of information that is needed at the central bank level.

It has been very useful to bring together academics, government policymakers, and monetary managers through this workshop. In the discussions of the FP model, assumptions and parameter values have been questioned along with the methodologies by which they are estimated. But the ultimate focus of how best to implement FP at the apex of monetary management has always remained in clear sight, and the discussions typically came back to this.

It has also been very useful to have a regional cross-section represented at the workshop. Malawi has benefited from hearing about the experience of other countries in FP implementation. Hopefully, participants from other countries have benefitted as well from hearing of Malawi's experience in this area. It has been particularly gratifying to find that Malawi may not be so far behind its regional neighbors in institutionalizing its FP model.

Much thanks goes to USAID for its assistance in helping RBM to develop and implement its macroeconomic consistency model. This support, provided through the MEMAR project and through the technical assistance of Bruce Bolnick, has paid large dividends in terms of RBM's capacity to use FP for maintaining macroeconomic stability in Malawi. With the FP model,

it is now possible for the Secretary of the Treasury to help set the agenda in discussions with the IMF—a welcome change. For this, RBM and the Government of Malawi is grateful to USAID.

Wishing the participants and guests a pleasant remainder of their stay in Malawi and a safe journey home, Dr. Ngalande declared the **Regional Workshop on Financial Programming** *concluded.*

Appendix 1: Papers:

Bruce Bolnick. *The Role of Financial Programming in Macroeconomic Policy Management*. HIID.

Martin Ganiza. *The Macroeconomic Consistency Model in Malawi*. RBM/MEMAR.

Ronald D. Mangani, et al. *Improving the Framework for Financial Programming in Malawi*. Chancellor College, HIID, EAGER/PSGE.

A.A.L. Kilindo, et al. *A Framework for Monetary Programming: The Tanzanian Case*. ERB, University of Dar es Salaam, HIID, EAGER/PSGE

Charles G. Koori. *Financial Programming in Kenya*. Central Bank of Kenya.

Carlos Baptista and Teodósio Waleza. *Mozambique's Experience on Financial Programming*. Bank of Mozambique.

David Kihangire. *Uganda: Status Report on Financial Programming, Macroeconomic Consistency, and Analysis*. Bank of Uganda.

Neil Nyirongo. *Financial Programming and Liquidity Management*, Reserve. Bank of Malawi.

Appendix 2: Participant List

Name	Institution	Position
G. Kabango	Reserve Bank of Malawi	Acting Director, International Operations
P. Zimpita	Ministry of Finance	Senior Economist
R. Mangani	University of Malawi	Lecturer
E. Ngalande	Reserve Bank of Malawi	Deputy Governor
K. Nkalamo	Bank of Zambia	Acting Assistant Director
E. Kambalame	Reserve Bank of Malawi	General Manager
C. Baptista	Bank of Mozambique	Team Leader
T. Wazella	Bank of Mozambique	Team Leader
N. Nyirongo	Reserve Bank of Malawi	Director, Financial Marketing Operations
G. Mthindi	University of Malawi	Associate Professor
M. Thondolo	University of Malawi	Head of Economics, Lecturer
C. Msosa	Reserve Bank of Malawi	Economist

F. Kadewere	National Economic Council	
E. Goneka	Reserve Bank of Malawi	Division Chief
O. Nkuna	Reserve Bank of Malawi	Senior Bank Officer
M. Kanyuka	National Statistical Office	Assistant Commissioner for Census and Statistics
M. Ganiza	Reserve Bank of Malawi	Assistant Division Chief
E. Luvanda	University of Dar es Salaam	Fellow
K. Mulwafu	Reserve Bank of Malawi	Assistant Supervisor
V. Nkosi	USAID/Malawi	Program Economist
J. Masawe	Bank of Tanzania	Deputy Director
C. Koori	Central Bank of Kenya	Senior Assistant Manager
J. Symon	Reserve Bank of Malawi	Economist
H. Taye	University of Malawi	Lecturer
M. Wemba	Reserve Bank of Malawi	Division Chief

T. Ruffer	Ministry of Finance/ODI	Economist
F. Mwega	African Economic Research Consortium	Consultant
S. Mtonakutha	National Economic Council	Senior Economist
J. Sulemane	Ministry of Planning and Finance	Economist
C. Nkwazi	Ministry of Finance	Senior Economist
D. Kihangire	Bank of Uganda	Assistant Director
R. Wieland	EAGER Project	Economist
P. Ligoya	Reserve Bank of Malawi	Supervisor
J. Nyella	Bank of Tanzania	Head of Financial Studies and Financial Programming
C. Deredza	MEMFI	Program Officer
B. Bolnick	HIID/RBM	Advisor
L. Mkandawire	Reserve Bank of Malawi	Senior Bank Officer
R. Dzanjalimodzi	Ministry of Finance	Secretary to the Treasury
C. Gray	HIID	Institute Fellow

M. Okeyo	Ministry of Finance (Kenya)	

T. Kahabe Ministry of Finance
P. Mamba Reserve Bank
C. Chuka Reserve Bank